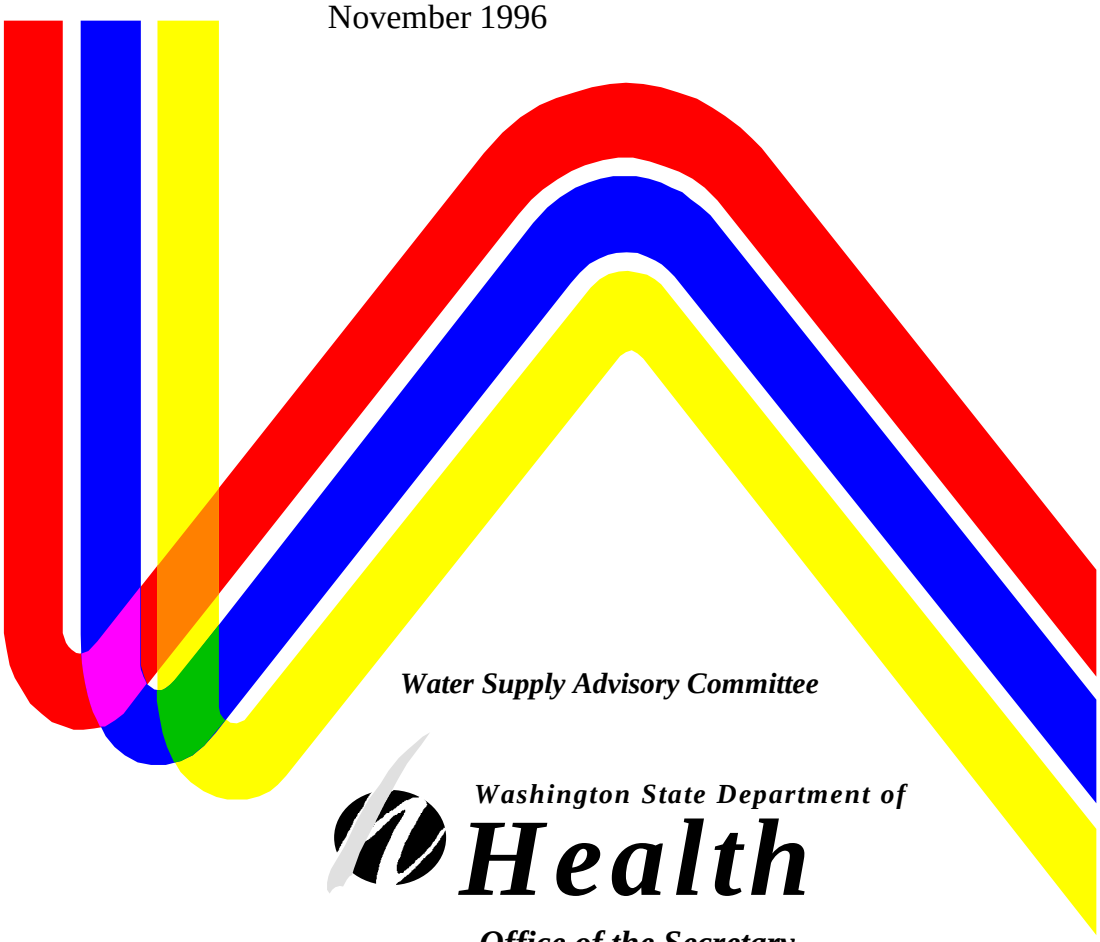
Drinking Water Program

Legislative Report

November 1996



Water Supply Advisory Committee

Washington State Department of

Health

Office of the Secretary

Drinking Water Program Legislative Report

November 1996

Water Supply Advisory Committee

Washington State Department of
Health

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December 23, 1996

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Dear Senators and Representatives:

I am pleased to transmit to you an assessment of the Department of Health's (DOH) Drinking Water Program requested by the 1995 Legislature in E2SSB 5448. Specifically, that legislation required DOH to submit a report to the legislature by November 1996, to include the views of the Water Supply Advisory Committee (WSAC), regarding the organization, functions, service delivery, and funding of the agency's Drinking Water Program.

This document contains the findings and recommendations of the WSAC, which was established by the 1995 Legislature in E2SSB 5448. It represents nearly a year and a half of dedicated work, led by Chairperson Judy Turpin. The members of this group are identified in the report, and represent a diverse set of interests and organizations in Washington. I am extremely grateful for the time they have invested into their analysis, and am impressed at their ability to achieve consensus on their recommendations.

DOH fully supports the findings, principles and approaches identified by the WSAC in this report relative to the issues associated with the regulation of public water systems, and the need to assure that Washington's public water supplies remain safe and reliable, both now and in the future. In general, the WSAC recommends increased resources be provided for certain categories of activities, particularly as they relate to utilization of new authority and funding under the revised federal Safe Drinking Water

Act (SDWA). To the extent that some recommendations may be implemented administratively, the agency is moving forward, and in fact has already begun implementation of some. To the extent either legislative or budget changes are required, the agency's plan for implementation has been forwarded to the Office of Financial Management to be considered for inclusion in the Governor's FY 1997-99 State Budget and as potential agency request legislation.

The legislature, in the 1995 legislation, requested an assessment by DOH and the WSAC of three specific topics related to the state's Drinking Water Program. The following summarizes the information on these topics from the text of the report, with the added perspective of DOH.

1. **Changes necessitated by revisions to the federal SDWA:** In August of this year, after three years of effort, Congress comprehensively overhauled the SDWA. Among its many new provisions, the new federal law does the following:

    - It provides numerous opportunities for state flexibility in the administration of federal requirements, particularly in monitoring and treatment requirements for small systems.

    - It authorizes funding for state-managed programs of financial assistance for water system capital needs, and the State Revolving Fund (SRF) Program, to which Congress appropriated $1.275 billion for the current federal fiscal year. (Washington's share should be approximately $30 million this year.)

    - It also requires, and provides funding for, the development of new or expanded programs in such areas as source protection, water system management, certification of water system operators, and technical assistance, in order for states to be able to use their new flexibility, and to avoid losing a significant portion of their SRF allocation.

These revisions to the federal law will allow Washington to tailor its requirements to state circumstances, focus on highest health priorities, and reduce the burdens on the numerous small water systems in the state. In order to do so, the state will need to develop the programs and provide state matching funds to fully meet the intent of the law.

2. **The extent to which the program has progressed toward meeting the objectives of the Public Health Improvement Plan (PHIP):** Since its presentation to the 1995 Legislature, the PHIP has been the blueprint for the

delivery of health services to the people of Washington. Among many key elements are (a) building the capacity of local governments and local health jurisdictions (LHJs) for delivery of direct health services, (b) partnerships between all levels of government and other stakeholder groups, (c) focusing on issues of high public health priority, (d) maximum utilization of cost-effective preventative programs, (e) development of assessment methods to allow evaluation of program effectiveness and the public health of people in the state, and (f) development of both state and local funding sources that are adequate and stable.

The Drinking Water Program is making progress in these areas, as evidenced by an increasing number of written agreements with local jurisdictions that delineate respective roles and responsibilities in regulating water systems. These are limited in their scope because of the unavailability of state funding for at least a share of the costs of providing such services. The program at DOH has also developed a comprehensive set of performance measures by which the program will, over time, be able to evaluate its efficiency and effectiveness.

However, the state continues to have an unacceptably high rate of non-compliance by water systems with basic testing requirements, and significant water quality issues related to untreated and unprotected surface waters, and nitrate, lead, copper, and coliform contamination of many water supplies. To a large extent, this problem is directly related to the large number of relatively small systems without proper management and operation, a situation that continues to worsen with a proliferation of new very small systems.

3. **The adequacy and necessity of existing program funding:** DOH and LHJs are increasingly challenged to provide services and implement federal and state laws relative to public water supplies with the resources currently available for these activities. Rapid growth in the state's population and number of water systems, major increases in the number and complexity of federal water quality standards, and heightened concern over the risks posed by waterborne diseases are among the major factors generating increased demands on state and local health governments to protect the health of people relying on public water supplies. State and local governments have become increasingly reliant on unstable and unpredictable fees for service to fund greater proportions of their program costs. Major growth over the past ten years in federal water quality requirements has not been accompanied by commensurate increases in federal funding.

DOH will continue to reprioritize use of current resources, and has already taken major steps to streamline procedures (such as those for plan/project reviews), and utilize alternative processes (such as passive and self-help compliance techniques and developing partnerships with third parties and local governments in order to more

effectively use available resources). However, additional resource gaps were identified by the WSAC and are documented in detail in the report.

The conclusion of the advisory committee was that an adequate statewide program for the protection of public water supplies would require increased financial resources, from stable and predictable sources, at both state and local levels. In addition, in order to take advantage of significant new federal funding being offered under the SDWA for existing and newly-required federal programs, including the SRF Program of water system financial assistance, the state will need to provide matching state resources.

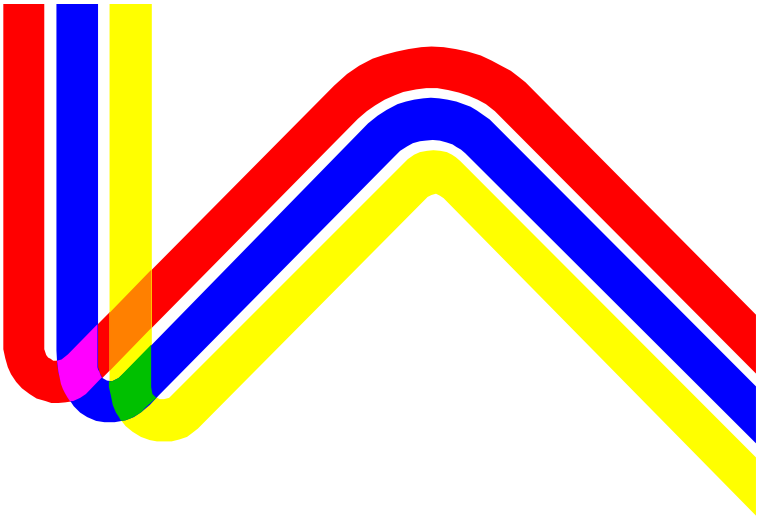
These issues have been addressed by the WSAC in a comprehensive fashion. Some, such as the small system proliferation issue, are not susceptible to short-term solutions, and the WSAC has identified them as issues for its own future agenda. For some, such as the relationship between reliable water supplies, planning, and water resource management, the WSAC has simply suggested to the legislature that the issues are significant, and should be addressed. For others, such as the role of the Utilities and Transportation Commission and economic regulation of certain water systems, the WSAC has tried to clarify the issues, without suggesting how they be resolved.

Overall, the work of the WSAC is of very high quality. The report is, I believe, clear, concise, straightforward, and worth the time to read. Again, I commend the WSAC members for their time and commitment to this effort, and I transmit their work to the legislature with confidence that the report will provide a sound basis for legislative action that we will support.

Sincerely,

BRUCE A. MIYAHARA
Secretary

cc: Senate Energy and Utilities Committee Members
Senate Agriculture and Environment Committee Members
House Energy and Utilities Committee Members
House Agriculture and Ecology Committee Members



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Executive Summary

Problem

The state's public health system now finds itself severely limited in its ability to assure Washington's residents safe and reliable sources of drinking water. This is due to threats of emerging diseases, the presence of chemical contaminants, complex federal standards, and the sheer number of small water systems in Washington. Public water systems also face challenges in bringing their facilities up to standards and meeting the expectations of consumers for safe and reliable drinking water. Many are unable to afford either necessary repairs or the installation of new facilities for assuring water safety.

Background

The Washington State Department of Health (DOH) was directed by the legislature in 1995 (SB 5448) to form a Water Supply Advisory Committee (WSAC). The charge of the committee is to advise DOH on the Drinking Water Program, review program funding, and make recommendations regarding implementation of the federal Safe Drinking Water Act (SDWA) and the Public Health Improvement Plan (PHIP).

In order to complete its 1996 Legislative Report, the committee developed a series of Guiding Principles describing how a comprehensive statewide drinking water program should function. These principles were used as a framework for evaluating drinking water needs and priorities, and identifying key differences between how the state's program currently assures the safety and reliability of drinking water, and how the committee believes such services should be delivered in the future. Recommendations based on this analysis were then developed by the committee.

The August 1996 reauthorization of the federal SDWA triggered refocusing some of the committee's work to take advantage of the opportunities in that Act, including access to funding through the State Revolving Fund (SRF) for public water system infrastructure needs.

Key Findings

The committee recommends the following actions in the coming biennium:

- Full implementation of the revised federal SDWA;
- Delegation of responsibility and accompanying funds from the state to local health jurisdictions, based on voluntary negotiated agreements;
- Improving the drinking water data system to produce accurate,

timely and more accessible information;

- Increasing the availability of appropriate training and technical assistance from the program and third parties for water system operators;
- Increasing the number of routine field visits and other technical investigations for water systems; and
- Developing a more comprehensive and accurate monitoring program for water system sources of supply.

Funding Recommendations

Increased funding for personnel and matching funds are required if the Key Findings of the committee are to be implemented. The committee recommends a balanced funding strategy that equitably distributes costs among those receiving services, and provides positive incentives. The recommended funding package would provide the following additional dollars per biennium:

- Federal Grant (Public Water System Supervision) $1.5 M
- State Revolving Fund (federal funds-match required) $3.8 M
- Restructured Fees[1] $2.1 M
- A dedicated portion of the Water Utility Tax $2.9 M
  (It should be noted that support for restructured fees is dependent on dedication of a portion of the Utility Tax.)
- The Model Toxics Control Act (MTCA) $ .79 M

Why This Is Important to Washington Now

The people of Washington State expect and deserve safe and reliable drinking water. The recent changes in federal law offer an opportunity to take significant steps toward reaching that goal. By working together we can develop a strong and resilient system that provides ongoing protection, proficient and affordable treatment and delivery, and accessible information to safeguard public health.

Implementing these recommendations will:

- Protect the health of our citizens from threats of waterborne illness and disease;
- Let us control our own destiny, rather than using a Washington, D.C.- directed "one size fits all" approach to implementing federal regulations; and
- Enable the formation of partnerships between state government, local government and utilities to ensure that the regulatory process is reasonable and appropriate for our state.

More Information

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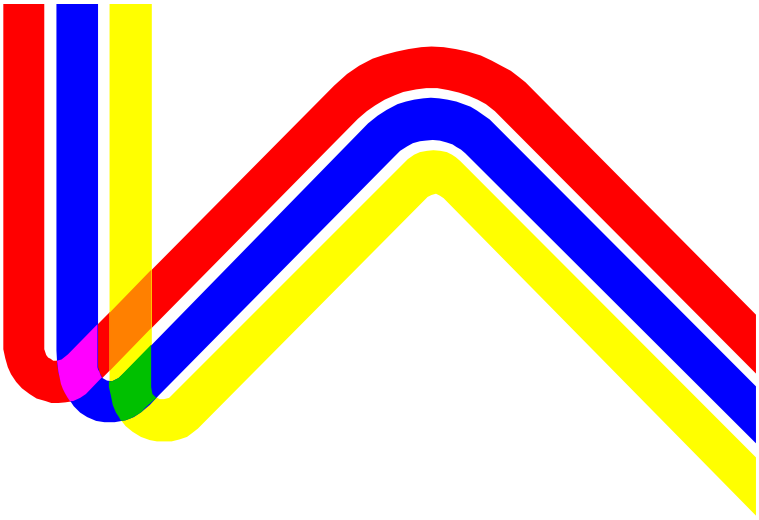
Department of Health Drinking Water Program (360) 753-1280

[1] Only $600,000 of this amount is actually new revenue. The balance represents a variety of fees that are now assessed individually but that are proposed to be rolled into a single yearly assessment (hence the term "restructured fees"). The $600,000 includes twenty percent agency overhead charge.



Water Supply Advisory Committee 1996 Legislative Report

Problem Statement

Historically, the state of Washington has planned and depended on its abundant supplies of high quality water to support continuing growth. Today, that dependence can no longer be taken for granted.

Small water systems now account for 95% of all public water systems in Washington.

Washington is growing rapidly, and its watersheds and ground water recharge areas are becoming more and more susceptible to microbiological and chemical contamination. This situation, coupled with the growing number of water systems with rapidly deteriorating infrastructures and the many new small systems going into service, has resulted in significant populations at risk in both community and non-community water systems. For example, in 1995, over 53 percent of the state's population was potentially exposed to one or more significant health risks.

The state's public health system now finds itself severely limited in its ability to assure it's residents a safe and reliable source of drinking water. This is due to a number of factors:

- New, emerging diseases, such as Cryptosporidium and Cyclospora;
- Chemical contaminants, such as nitrates, lead, copper, pesticides, and the byproducts of disinfecting drinking water;

- The complexity of implementing new drinking water monitoring and treatment standards;

- The sheer numbers of small water systems that must be regulated; and

- Water availability, although this issue is outside the direct scope of public health regulations.

Solutions to the state's drinking water problems will require an effective partnership between federal, state and local governments, and the private sector. In this new partnership, roles, responsibilities and accountability to the public must be clearly spelled out, understood and accepted. As we approach the Year 2000, this partnership needs to be strengthened in the state of Washington.

Background/Introduction

As of April, 1996, there were 15,135 public water systems in Washington State, serving 4.5 million people. The balance of the state's 5.3 million people are served by individual water systems.

The mission of the Washington State Department of Health (DOH) Drinking Water Program is to protect the health of the citizens of Washington State by assuring safe, reliable and affordable drinking water. The intent is to reduce or eliminate the health risks to which our citizens are exposed, and to educate the public regarding these risks so they are able to make informed decisions about their own health and well-being.

DOH has primary responsibility for oversight of all public water systems, including responsibility for providing technical assistance, information and regulation. Capacity building for the local oversight of public water supplies is being pursued under the Public Health Improvement Plan (PHIP), and there are negotiated agreements between DOH and most local health jurisdictions (LHJs) for oversight of some public water systems.

In 1995, the Washington State Legislature enacted SB 5448, which contains a number of provisions relating to the regulation of public water systems within the state. One section of that legislation required the department to create a water supply advisory committee. Although DOH has for years had a similar committee to advise its Drinking Water Program, this bill included specific charges to the reconstituted Water Supply Advisory Committee (WSAC).

The WSAC is responsible for reviewing the adequacy and necessity of the current and prospective funding for the program, and forwarding its findings on funding to DOH for inclusion in a report to the legislature. This is in addition to providing advice to DOH on the organization, functions and service delivery methods of the program.

The committee began work in November 1995, and completed this report in October 1996. Over 2,000 hours of volunteer time were expended by members of the WSAC and other interested parties in research and discussions regarding how to resolve the public health protection issues and meet the legislative charge.

In order to complete its task, the WSAC developed a series of Guiding Principles describing how a comprehensive statewide drinking water program should function. These principles, which are in the Appendices, were used as a framework for evaluating drinking water needs and priorities, and to provide guidance for the Drinking Water Program.

The committee also affirmed the principles described in PHIP, which developed the blueprint for improving health status in Washington through prevention and improved capacity for public health service delivery. The core functions of public health, as described by the PHIP, are those of health assessment, policy development and administration, health protection and promotion, and access and quality of care.

The overall vision of how drinking water should be protected in Washington is captured in the initial WSAC Working Principle:

Principle: "The state of Washington needs to deliver appropriate services to people in the state in order to ensure safe, reliable and affordable supplies of water. State, federal and local public health jurisdictions, including tribal governments, public water systems and their consumers, share the responsibility for promoting and protecting the health of their communities."

Identification of Needs

We promote public health protection by reducing risks.

Based on the principles developed by WSAC and the goals of PHIP, current and proposed activities that DOH has identified for the next biennium were examined, and areas in which current practices do not reflect these principles were explored. From this discussion, both necessary core activities and unmet needs that keep the Drinking Water Program from fulfilling the intent of the principles were identified.

If Washington State is to fulfill the expectations of its citizens regarding the safety of their drinking water, funding for both the basic core program and the unmet needs that were identified must be provided.

The WSAC recognizes, however, that bringing the current Drinking Water Program up to the point that an acceptable level of public health protection can be provided will realistically take two to three biennia to complete. Therefore, the committee prioritized the unmet needs into two groups. The first group,

called *"Immediate Needs,"* includes those where reducing risk and increasing public health safety are paramount, and legislative action to remedy the problem is necessary. These needs must be addressed during the next biennium.

The second group, called *"Important Needs,"* represent very real and very important deficiencies in the ability of the Drinking Water Program to protect our citizens. However, because their impact on risk reduction and public health protection is less immediate, or because other needs in the *"Immediate"* group must be addressed first in order to lay the foundation for successfully dealing with these deficiencies, these activities could be phased in over several biennia if necessary.

IMMEDIATE NEEDS

PHIP Core Function - Health Assessment : "The regular collection, analysis and sharing of information about health conditions, risks and resources in a community. Assessment includes gathering data as well as conducting epidemiological and other investigations."

- **Improve Assessment of Public Health Risk and Program Effectiveness**

Principle: "The protection of public health through an effective statewide drinking water program is a fundamental responsibility of state and local government. The state should provide the resources and comprehensive funding mechanism necessary to develop and maintain the capacity to protect public health and retain primacy for implementing the federal Safe Drinking Water Act (SDWA)."

Gaps in our ability to monitor our drinking water supplies and assess their quality reduce our ability to assure that we are adequately protecting the health of our citizens. Much of the basic data needed for risk assessment can be provided through routine monitoring activities.

Resources available for routine monitoring and assessment of risks for specific populations are currently inadequate. This makes it difficult to assess the statewide health impacts of existing, new, and emerging contaminants and diseases. Without this assessment, water purveyors cannot be provided with information that would promote effective handling of problems and new contaminants. Without routine assessment, individuals cannot be provided with information that enable them to make reasonable decisions regarding their own health. Without routine assessments, it is difficult to measure the true effectiveness of the Drinking Water Program.

Developing and sharing data is critical.

- **Improving and Sharing Information and Measuring Health Outcomes**

Principle: "Water quality information, including standardized reports of critical indicators, should be accurate, accessible, useful, and easily understandable. The information should be readily usable by decision-makers at the state and local levels, and by purveyors and consumers, to effectively address public health needs and water resource requirements."

The current DOH data management system is unable to support even basic water system compliance assessments and evaluations. It is also unable to support activities that are necessary if local delegation of authorities is to occur. In addition, the reauthorized federal SDWA requires states to track the occurrence of contaminants in water supplies in addition to the current tracking of violations. This will require upgrades and changes in the DOH database.

Two critical information management elements are needed immediately:

1. The development of new data management applications for public water system compliance, risk assessment, assessing program effectiveness, and providing water quality information to federal, state and local decision-makers, purveyors, and the public.

2. The ability by DOH to link and share data with federal, local and statewide databases in both the public and private sectors.

These two information management components are the key to our ability to measure health outcomes and provide this and other pertinent water quality data to others. Without them, meaningful delegation of drinking water functions to local government or other partners cannot occur, and our protection of the public's health will be compromised.

State and local partnerships must be developed

PHIP Core Function: Policy Development and Administration : "The development, implementation and evaluation of policies in a comprehensive manner that incorporates scientific information and community values, and an administrative structure that supports the core public health functions."

- **Clarify and Support the Roles of DOH and Local Jurisdictions**

Principle: "It is in the best interests of consumers and utilities that regulation enforcement and program implementation occur, with state oversight, at the lowest appropriate level of government possible. The development of local jurisdictions' ability and willingness to administer drinking water regulations should be encouraged, with the state providing adequate funding and sufficient direction to ensure that programs are consistent statewide. The state should provide consultation and technical and financial assistance to those who carry out public health functions at

other levels of government."

This principle is central to the vision developed both by the WSAC and the earlier DOH Task Force 2000 regarding effective delivery of the Drinking Water Program. However, a key component of the effort, providing the necessary authorities and resources to support greater delegation, has not been provided. If the resources and authorities are not available, the implementation of a comprehensive drinking water program that provides basic public health protection for Washington's citizens will fail.

One of the basic principles established for the Drinking Water Program is that "stable, equitable revenue sources" must be provided. This can only be attained if funding alternatives for a comprehensive drinking water program are considered.

All parties, including consumers and the regulated community, must understand what is required of water systems to protect public health.

Currently, the extremely low Operating Permit fees established by the legislature for small Group A water systems make a similar funding mechanism for Group B program support virtually untenable. This is because in order to be "equitable" in relation to system size, the fee would be so low that it would cost more to collect it than would be generated. In order to meet the goal of equitable revenue sources, an analysis of fee charges for all sizes of public water supplies must be undertaken.

Principle: "Both the regulated community and the general public must have a clear understanding of who has regulatory authority and responsibility for delegated functions. The responsibility for program implementation must be linked with the authority to make decisions."

Principle: "Planning efforts should ensure that federal, state and local regulatory mandates are met in a manner that protects public health, assures reliability in the system and source, utilizes a preventive approach, and drives for clarity in state and local regulatory roles and responsibilities."

Principle: "Planning requirements should be integrated with state and local land use planning requirements, so that as water system plans are developed, they are consistent with those requirements."

Principle: "Planning efforts should focus on the prevention of non-viable systems."

The SDWA requires the state to have the authority to assure viable water systems. Assuring viability requires adequate financial resources and coordinated planning efforts by state and local government agencies. Decisions affecting water availability and water rights must be made in a timely manner to facilitate decision-making at both the state and local level.

Responsibility and authority in decisions affecting water supply and protection should be clearly delineated between state and local governments and criteria for decision-making should be clearly articulated and used upon defensible public health risk. State statutes and their implementation should ensure coordinated and effective water planning and should support and ensure viability of future water systems including appropriate use of exempt wells.

PHIP Core Function - Prevention : "Health protection and health promotion are the two components of prevention. Health protection refers to population-based services and programs that control and reduce the exposure of the population to environmental hazards, conditions, or factors that may cause disease or death. Health promotion is health education fostering healthy living conditions and life styles."

- **Develop Effective Compliance Measures to Protect Public Health**

Principle: *Compliance:* "All consumers of drinking water from public water systems should be assured of safe, reliable and affordable drinking water meeting basic public health protection standards."

Principle: Managing Sources of Supply to Protect Public Health: "Planning efforts should ensure that federal, state and local regulatory mandates are met in a manner that protects public health; assures reliability in the system and source; utilizes a preventive approach; and drives for clarity in state and local regulatory roles and responsibilities.

To fully carry out these principles, three specific needs which are currently unfulfilled must be met immediately:

1. In order to safeguard the health of our citizens, steps must be taken to prevent the creation of water systems that are unlikely to be able to meet long-term performance standards. Such systems often are not self-sustaining, and lack a reliable water supply and adequate managerial, technical, operational and financial capacity. They frequently are unable to provide safe water to their consumers.

2. Significant Maximum Contaminant Level (MCL) violations, as well as monitoring for all public water systems, must be addressed. If this does not occur, we will remain unable to provide essential public health protection to the consumer.

3. Less costly passive enforcement techniques must be developed to bolster traditional enforcement methods, which alone have not been effective in reducing the occurrence of drinking water violations. However, funding and authority to develop tools such as property seller's disclosure statements and landlord-tenant agreements that provide information regarding the drinking water supply, have not been provided. Since the cost of the traditional approach in terms of dollars and staff resources when applied to Washington's numerous

smaller systems is prohibitive, the development of alternate enforcement techniques is critical.

Finally, we need to ensure that the rules and requirements applied to Washington State by the federal SDWA are appropriate for our state. We can only accomplish this by actively participating in the federal rulemaking process.

- **Empowering Partnerships**

Principle: "Many water quality problems can be prevented by educating water purveyors and ensuring that they are properly trained and knowledgeable about the potential for health risks associated with their systems."

Principle: "Methods to inform and educate the public about drinking water quality and its implications for public health must be developed. These should include methods for providing education to small communities without organized water system ownership regarding how to organize, secure grants and/or loans, and acquire the system(s)."

Adequate resources must be provided if the collaborative partnerships envisioned are to succeed. This includes funds to develop and implement the necessary water system operator training and education, as well as for the development and effective delivery of educational material for consumers. Expanded educational activities are one of the new requirements of the 1996 Amendments to the SDWA.

IMPORTANT NEEDS

The Committee also recognized other important needs.

Some of the needs that were identified as *"Important"* by the WSAC and that need to be completed are listed below by PHIP core function. These include some functions that are currently being performed but which will need enhancements in the future. They include:

Health Protection Activities :

- Additional special purpose investigations of systems that have significant public health problems, including small systems, and additional sanitary surveys.

- Review and approval of water system plans for new, problem, and expanding systems and for all Group A water systems over 1,000 connections.

- Develop and implement water works and distribution standards, and train consultants and local health staff on new standards oriented

toward smaller systems.

- Coliform Violations: Assess program performance, identifying significant public health findings/issues; revise coliform enforcement strategy, and Environmental Protection Agency (EPA) standards on cross-connection protection.

- Target water systems within high priority regional resource areas and provide them with technical assistance to assure compliance. Meet new SDWA resource protection requirements with existing systems.

- Review ground water under the influence (GWI)-related projects. Delegate project approvals to consultants and other third parties.

- Utilize reuse principles consistent with public health standards.

PHIP Core Function - Assessment :

- Develop the capacity of the state public health laboratory to serve as a reference lab and be fee supported.

PHIP Core Function - Access and Quality :

- Implement new Group A operator certification policy. Modify certification to be appropriate to size and complexity of systems and consistent with federal requirements.

A complete list of all the Needs can be found in the Appendices.

Recommendations

"Amendments to the federal SDWA provide the state with significant opportunities to improve public health protection. The WSAC recommends we take full advantage of these." Judy Turpin, Chair

- **Opportunities Presented by the 1996 Amendments to the Federal SDWA**

  The legislature should act to take full advantage of the opportunities presented to the state by the 1996 Amendments to the federal SDWA.

  The new provisions include (1) new programs, such as the State Revolving Loan Fund that will provide low-interest loans to water systems; (2) new mandates on the state, such as new requirements for ensuring water system operational capacity, source protection, operator certification; and (3) new flexibility to the state in implementing federal requirements. The legislation provides some additional funding to the state, which for some activities must be matched by new state funds.

Some specific changes are needed if full utilization of the opportunities presented under the federal reauthorization is to occur. One of these is:

- Amend RCW 70.119A.170 (State Revolving Loan Fund statute) to implement the State Revolving Fund (SRF) created as part of the 1996 Amendments to the federal SDWA.

Other changes related to the reauthorization are discussed in greater detail in the following section. These are identified by "R-SDWA" in parentheses after the item. A summary of the changes required by the 1996 Amendments to the SDWA is included in Appendix E.

- **Recommendations to DOH and the Legislature**

In order to address the public health concerns described in this report, a number of actions are needed. Some will require legislative action, while some may be addressed by changes in direction or allocation of existing resources within DOH. Others are necessary if the state is to comply with the requirements of the reauthorized federal SDWA.

In order to address the *"Immediate Needs"* identified in this report, the WSAC recommends that the following actions be taken for the coming biennium.

Improve Assessment of Public Health Risk and Program Effectiveness *-and-* **Improve and Share Information and Measuring Health Outcomes**

Legislative Action:

- Amend RCW 70.119A.115 to allow public water systems to enter into an agreement to have DOH conduct their source monitoring program.

Primacy allows the state to grant waivers to some SDWA monitoring requirements. A waiver to the City of Seattle Water Department, is estimated to have saved the city, and hence Seattle residents, over $200 million.

Departmental Action:

- Take advantage of monitoring relief to water systems for certain contaminants, as offered under the federal reauthorization. (R-SDWA)

- Develop new data management applications for public water system compliance, risk assessment, assessing program effectiveness, and provide water quality information to state and local decision-makers, purveyors, and the public. (R-SDWA)

- Develop DOH capacity to link and share data with local and statewide databases in both the public and private sectors.

Clarify and Support the Roles of DOH and Local Jurisdictions

Changes needed in order to build capacity and fund local activities:

Legislative Action:

- Amend RCW 70.119A.110 revising requirements governing the collection and modification of fees for water system operating permits.

- Amend RCW 82.16.010 (State Utility Tax) to dedicate a percentage of the monies collected under subsection (1) to the Safe Drinking Water Account.

Departmental Action:

- Develop and implement a program sharing responsibilities for specified public water systems first to local government who volunteer to participate, or to other entities, based on established criteria and performance standards.

Develop Effective Compliance Measures to Protect Public Health

Legislative Action:

- Provide legal authority to prevent formation of systems without adequate financial, technical and managerial capacity to comply with SDWA requirements. (R-SDWA)

- Amend RCW 64.06.020 to include information regarding the household water supply in the real property transfer disclosure statement.

Departmental Action:

- Respond to all water system water quality violations before the violations are repeated. (R-SDWA)

- Develop new standards to meet EPA requirements, and Washington-appropriate variances/exemptions from such requirements. (R-SDWA)

- Prepare strategies for assisting systems in significant non-compliance with federal requirements, and report to the Governor on progress made under these strategies. (R-SDWA)

- Develop and implement a source water protection program, working in collaboration with other agencies. Provide assistance to develop voluntary incentive-based partnerships to protect source waters, using the Source Water Petition Program of the reauthorized SDWA. (R-SDWA)

- Participate in developing a statewide monitoring plan with EPA to create an occurrence database for unregulated contaminants in small federally regulated systems. (R-SDWA)

- Participate in EPA rulemaking and the development of guidance materials. (R-SDWA)

- Require a conservation plan as an element of eligibility for water systems receiving funds from the SRF. (R-SDWA)

Empowering Partnerships

Legislative Action:

- Amend RCW 70.119.030 to require certified operators for all Group A systems as necessary to conform to federal law. (R-SDWA)

Departmental Action:

- Develop and implement a technical assistance and training program for small water systems, utilizing third parties as appropriate, and funding the activities with a portion of SRF funds. (R-SDWA)

- Adopt minimum standards for certification of operators appropriate for the various classes of systems. (R-SDWA)

- Develop guidelines, procedures and training for water purveyors to use when they provide the mandatory annual report of the status of their water system to consumers. (R-SDWA)

- Recommend to the Governor that a waiver be requested from EPA allowing small systems to use alternate notification techniques when complying with the mandatory annual report requirement. (R-SDWA)

- Explore alternatives to current methods of developing and providing information and education to consumers, decision-makers and purveyors.

Funding Recommendations

The WSAC identified significant gaps in the ability of the Drinking Water Program to assure protection of the health of the citizens of Washington State. The gaps exist in both the incompletely implemented current program, as well as in the program's inability to provide the necessary additional activities needed to protect public health in the future. The level of services necessary to meet the deficiencies in both areas can be provided only if additional resources are made available to states and LHJs.

The need for additional resources can be grouped into three categories:

1) Those necessary to address shortfalls in the existing program;

2) Those necessary to fund either new activities or higher levels of service; and

3) Those necessary to respond to new requirements resulting from the 1996 Amendments to the federal SDWA.

The WSAC recommends that the department pursue a funding strategy that utilizes a variety of existing and new sources, with the intent that there should be a direct relationship between the source of funds and the activities to be performed with the funds. There should be an equitable distribution of costs among those receiving services, and where appropriate, positive incentives for satellite management and other good operating principles should be incorporated into fee structures.

Additional or expanded activities and FTEs identified by the WSAC as needed to meet identified deficiencies should be funded from new revenue sources. The new revenues would come principally from the following sources:

- Federal Grant (Public Water System Supervision)

  Source: Part of the reauthorized SDWA, providing approximately $1.5 million additional dollars per biennium.

  Use of Funds:

  - Implementing and administrating requirements of the federal Act, including:

    - data management enhancements;

- targeted compliance; and
- technical assistance activities.

- State Revolving Fund

  Source: Part of the reauthorized SDWA, providing about $3.8 million per biennium in set aside funds.

  Use of Funds:

  - Administering the SRF; and
  - New activities relating to the SRF including:

    - system capacity development;
    - source protection;
    - operator certification; and
    - other new public health driven activities.

- Restructured Fees

  Source: Additional revenue from public water system Operating Permit fees, reflecting the inclusion of some services that are currently paid for through fees for service, and a per connection charge for basic program services which should be shared equitably among all Group A systems. This is estimated to generate approximately $2.065 million in the coming biennium.[1]

  Use of Funds: Providing part of the required state match for new federal funding under the SDWA. Activities will include:

  - Basic program services, including administration, data, compliance, local health liaison;
  - Consolidated Source Monitoring;
  - Additional Routine Sanitary Surveys; and
  - Education and Training.

- Utility Tax

  Source: A dedicated portion of the existing water utility tax that now goes to the General Fund, to provide approximately $2.9 million in the coming biennium.

[1]

Use of Funds:

- As part of the required state match for new federal funding, particularly for the SRF dollars; and
- To fund local health and other third party delegation of activities.

Comment: Support by the WSAC for restructuring and increasing the Operating Permit fee is dependent on the dedication of this portion of the utility tax.

- The Model Toxics Control Act (MTCA)

  Source: Additional $791,000 from the MTCA.

  Use of Funds:

  - Defraying the analytical laboratory costs that would otherwise be borne by public water systems to meet SDWA requirements for testing.

- Centennial Fund

  Source: No proposed change.

  Use of Funds: Directly related to water quality objectives of the Centennial Program, including:

  - Technical Investigations;
  - Waterworks Treatment Standards;
  - Water System Planning; and
  - Resource Protection.

The WSAC recognizes that the changes recommended in this report will result in increased per capita costs to water utilities. However, the WSAC hopes that the approach recommended in this report, which emphasizes education and other innovative compliance techniques, holds the promise of eventually reducing, or at least holding down, the per connection program costs.

The WSAC also recommends that during the next year the effectiveness of strategies based on the concept that an entity benefiting from a service should pay for that service should be evaluated. This should include surveying programs used in states using this strategy, an analysis of updated information available through the new DOH data management system, and an examination of the benefits that should be paid for proportionately among all water systems because they benefit or protect the

general public. WSAC believes that it is possible that this strategy may result in a more equitable distribution of costs.

It should be specifically noted that the WSAC realizes that federal funds appropriated for the new SRF will cover only a small percentage of water system capital costs created by federal and state drinking water regulations. DOH and the EPA have estimated the capital investment needs of Washington's water systems to be in excess of $3 billion, but the SRF probably will provide no more than $18 - $25 million annually of this need.

The WSAC recommends that the state develop additional funding sources, similar to the former Referendum 38 Program, that will help water systems fund these capital improvements. Capital needs are particularly severe among smaller water systems, whose rates can easily exceed $50 per month when they upgrade facilities to meet drinking water regulations.

- **Actions Needed in Other Arenas**

  If the Drinking Water Program is to achieve success, there are other issues that must be addressed that fall outside the ability of either the WSAC or DOH to resolve. These include such things as comprehensive land use planning, economic regulation, customer protection, resource protection, and water rights allocation. These issues all have potential public health implications that must be considered when they are discussed and resolved. Areas in which the WSAC has special concerns are listed in the Appendices.

Why This Is Important To Washington Now

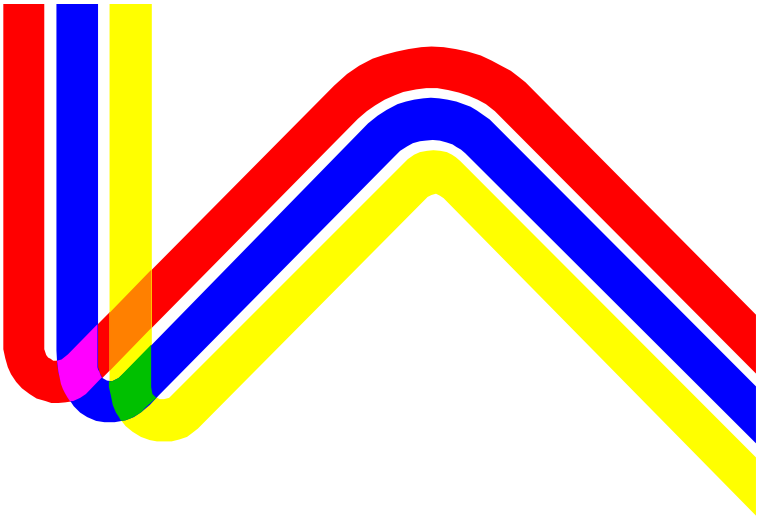
The people of Washington expect and deserve safe drinking water. The recent federal law changes offer an opportunity to make significant steps toward reaching that goal. However, in order to seize this opportunity the state will be required to step up to the challenge. By working together we can develop a strong and resilient system that provides ongoing protection, proficient and affordable treatment and delivery, and accessible information to safeguard public health. The WSAC urges that we begin the process immediately.

The following terms and definitions are commonly used in drinking water.

Centennial Fund:	The funds appropriated to the Drinking Water Program in 1993 that replaced state General Funds from the Centennial Clean Water Account.
Coliform Violations:	Either a violation of the maximum contaminant level (MCL) for E. coli, fecal coliform, or total coliform bacteria or a monitoring violation due to insufficient sampling for a month.
Cross-Connection:	A direct or indirect connection between the distribution piping of a public water system and either customer plumbing or on-site piping, which may contain a liquid or gas contaminant.
Cryptosporidium:	A microorganism (protozoan) that forms cysts and causes a spectrum of illness in humans ranging from asymptomatic infection to gastroenteritis (diarrhea and abdominal cramping) to life-threatening disease for immunocompromised patients. Currently, no antibiotics proven to be effective against it. It is similar to the parasite known as "Giardia," except cryptosporidium survive better in the environment and are more resistant to disinfectants.
Cyclospora:	A microorganism resembling blue-green algae associated with prolonged or relapsing diarrhea.
Environmental Protection Agency (EPA):	Implements the SDWA; sets national drinking water standards; provides money/assistance to states; conducts drinking water research/training; and administers other federal environmental laws.
Group A System:	Public water system serving 15 or more connections or 25 or more people.
Group B System:	Public water system serving less than 15 connections.
GWI:	Ground water under the influence of surface water.
MCL:	Maximum contaminant levels (MCLs) established by the EPA. MCL is the highest amount of a contaminant allowed in drinking water.
Model Toxics Control Act (MTCA):	Washington's citizen mandated toxic waste cleanup law, the Model Toxics Control Act (MTCA) (Chapter 70.105D RCW) was established in March 1989. In developing the Act's cleanup regulation, Ecology established cleanup standards and requirements for cleanup actions. MTCA funds hazardous waste cleanup through a tax on hazardous substances.

Operator Certification Program:	Examines and certifies the competency of operators in charge of all but the smallest Group A public water systems.
Public Health Improvement Plan (PHIP):	The state's "blueprint" for protecting the health of Washington's citizens, implemented by local communities seeking stable public health funding and the means to address unresolved public health problems.
Public Water System:	Any system (excluding a system serving only one single-family residence and a system with four or fewer connections all of which serve residences on the same farm, providing piped water for human consumption) including any collection, treatment, storage or distribution facilities under control of the purveyor and used primarily in connection with such system; and collection or pretreatment storage facilities not under control of the purveyor primarily used in connection with such system.
Reauthorization (SDWA):	Safe Drinking Water Act (SDWA) of 1996 - Changes and additions to the federal SDWA passed by the Congress in August 1996.
Referendum 38 Program:	Voter-approved referendum to sell bonds to fund water supply improvements, fully described in Chapter 43.99E RCW. This referendum was approved by the electorate in the general election of November 1980. The overall referendum includes municipal and agricultural water supply improvement programs. The Department of Ecology administers the agricultural program.
Resource Protection:	Activities and programs necessary to provide the highest quality source of water available, prevent contamination of those sources, and ensure the long-term reliability of those sources.
Risk Assessment:	A qualitative and quantitative evaluation performed in an effort to define the risk posed to human health and/or the environment by the presence of potential presence and/or use of specific contaminants.
Safe Drinking Water Act (SDWA):	Passed in 1974, includes water quality standards, sampling, treatment and public notification requirements. Amended in 1986 and again in 1996.
Sanitary Survey:	An on-site examination of the water source, facilities, equipment, operation and maintenance procedures, and management practices of a public water system for the purpose of evaluating the adequacy of the water system for producing and distributing safe drinking water.

Significant Non-Compliance (SNC):	Violation of state drinking water rules where such violation or violations may present an immediate or significant risk to the health of consumers.
Source Monitoring Program	Regulatory program oriented to the proper monitoring of source water quality and enabling where applicable, waivers to routine source water monitoring.
Source Protection:	Effective pollution prevention programs identify potential contaminant sources and allows regulatory agencies to target them.
Source Water Protection Program:	Program mandated by the SDWA to (1) delineate (identify) the boundaries of the area(s) that contribute water to public drinking water supplies (both ground water and surface water) and (2) assess the susceptibility of the drinking water (source water) to contamination sources within the identified area. In Washington, this program is/will be a combination of Department of Health's wellhead protection program and watershed control program.
Task Force 2000:	Appointed by DOH in 1993, the task force's mission was to develop state policy recommendations regarding how a comprehensive drinking water program should be structured/funded in Washington State by the year 2000.
Water Supply Advisory Committee (WSAC):	An advisory group created by SB 5448 in 1995, the WSAC reflects a broad range of interests in the regulation of water supplies substantially affected by the department's role in implementing state and federal requirements for public water systems.
Water Works Distribution Standards:	A set of State Board of Health-approved water system distribution design standards (for Group A public water systems).
Water Works Treatment Standards:	A set of State Board of Health-approved water quality treatment design standards (for Group A public water systems).



Appendices

A. Water Supply Advisory Committee Drinking Water Principles

B. Key Issues/Needs

C. Drinking Water Quality (previously titled Water System Compliance - differs from original printing)

D. Actions Needed in Other Arenas

- Comprehensive Land Use and Water Resources Planning
- The Utilities and Transportation Commission

E. Summary of the 1996 Amendments to the Safe Drinking Water Act

Note: The following documents or Executive Summaries, containing information that might be of interest in relationship to this report, may be obtained from DOH.

Water Supply Advisory Committee Subcommittee Rep orts
Public Health Improvement Plan Executive Summary
Drinking Water 2000 Task Force Report Executive Summary
Department of Health Annual Reports

Water Supply Advisory Committee Drinking Water Principles

The state of Washington needs to deliver appropriate services to people in the state in order to ensure safe and reliable supplies of water. State, federal and local public health jurisdictions, including tribal governments, public water systems (PWSs) and their consumers, share the responsibility for promoting and protecting the health of their communities. The following are basic principles that will guide how a comprehensive drinking water program should function.

Public Health Protection

All consumers of drinking water from PWSs should be assured of safe, reliable and affordable drinking water meeting basic public health protection standards. These standards, and the degree of regulation, are articulated in State Board of Health policies and the Public Health Improvement Plan (PHIP). The degree of regulation required may be different depending on the type and size of the system. The degree of regulation applicable to Group A and Group B systems should be made clear to the consumer at the time of the sale of property, through mechanisms such as mandatory disclosure statements or appropriate wording on property title documents.

The protection of public health through an effective statewide drinking water program is a fundamental responsibility of state and local government. The state should provide the resources and comprehensive funding mechanism necessary to develop and maintain the capacity to protect public health and retain primacy for implementing the Safe Drinking Water Act (SDWA).

In allocating resources to drinking water program activities, prioritization should be made based on public health risk and cost-effectiveness. In evaluating the severity of public health risk the following factors should be considered:

- Degree of Hazard;
- Populations at Risk;
- Need for Intervention; and,
- Maximizing of Health Benefits.

Functions of the Department of Health and Local Jurisdictions

All levels of government have a collaborative responsibility for protecting public health through an effective drinking water program. Responsibilities for the program shall be carried out according to principles and standards identified in the PHIP.

The Department of Health (DOH) should develop a long-range strategic plan, as well as time-limited and measurable program objectives and performance standards. Information should be collected and analyzed in order to evaluate the effectiveness of program activities in reducing risk and improving health status, and to determine whether the program is achieving

its stated objectives. Local jurisdictions should be encouraged to participate in the development of the plan, and to integrate their program activities into it.

In developing or modifying regulatory programs, the state must weigh economic impacts on the affected regulated communities, and using its ability to be flexible within its SDWA mandates, adopt programs that are the least burdensome and still achieve public health objectives. Management of costs should be factored into any arrangements for delivery of services, with a preference for the least-cost method of delivery. Finally, implementation plans for regulatory requirements should include a process for evaluating whether the program is achieving its stated objectives.

The state should rely on its programs to certify the competence of professionals in the drinking water field who deliver direct services to water systems or their customers. Efforts also should focus on measures to ensure the quality of such certification programs.

State and local health jurisdictions (LHJs) should work to ensure that utilities are included in the PHIP process.

Governance and Delegation

DOH has primary responsibility for all PWSs, including responsibility for providing technical assistance, information, and regulation. Capacity building for the local oversight of public water supplies should be pursued in accordance with the principles of the PHIP, and the current practice of negotiated agreements (JPOs) between DOH and local jurisdictions should be continued.

It is in the best interests of consumers and utilities that regulation enforcement and program implementation occur with state oversight, at the lowest appropriate level of government possible. The development of local jurisdictions' ability to administer drinking water regulations should be encouraged, with the state providing adequate funding and sufficient direction to ensure that programs are consistent statewide. The state should provide consultation and technical and financial assistance to those who carry out public health functions at other levels of government.

Delegation and shifting of functions should be phased in and coordinated with other state activities, such as PHIP and regulatory reform. Routine audits should be conducted to ensure that the state program is being properly implemented when it is delegated. Where necessary, the state must be ready to re-assume delegated activities.

Delegation must not result in a decreased level of public health protection, nor in conflict or inconsistent application of regulations. It should not be used to shift problems from one level of government to another level.

Third party providers should be used where services can be provided more cost-effectively than by state or local government. In this context, "cost-effective" includes the concepts of timely delivery and appropriate quality assurance functions.

Both the regulated community and the general public must have a clear understanding of who has regulatory authority and responsibility for delegated functions. The responsibility for program implementation must be linked with the authority to make decisions.

Overlapping responsibilities between agencies should be coordinated so that the various requirements are clear to the applicants, are met prior to granting of final approval, and agency approvals occur in reasonable order. For this to occur:

- State and local government should address water supply availability in their land use planning;
- A mechanism needs to be put in place to address interim needs in order to complete a successful regional water resource plan;
- Local governments are responsible for providing land use applicants with state and local water system requirements, and assuring compliance prior to land use approval; and
- As increasing demands are made on our water resources, applicants will have to assist state and local governments in ensuring that adequate data is available, so that an informed decision on water availability can be made.

Program Funding

The finance and governance structure must:

- Provide for stable, equitable revenue sources.
- Include proportionate financing responsibilities among state and local governments for those public health functions that must be universally and equitably available statewide.
- Hold all publicly funded agencies and organizations accountable for the allocation and use of resources.
- Link the responsibility for financing with the authority for decision-making.
- Support core functions of assessment, policy development and assurance.
- Encourage partnerships with other agencies, tribal governments and organizations that affect delivery of public health and related services.

The state/local shares of financing core function capacity should be approximately equal statewide by 2001. *(*Source*:* the *Public Health Improvement Plan,* referencing principles for public health agencies in general.).

The need for funding must be well-documented, analyzed and defensible.

Public (non-fee) funds should support program capacity to the maximum extent practical. Examples include: federal funds, state and local general fund, dedicated utility tax, PHIP funds, and other appropriate public funding sources.

Services that benefit all public water systems and the general public should be funded through a mechanism that is equitable and not related to a specific service provided.

The basis for Operating Permit fees and fees for service should be clearly defined, fair, and allocated rationally and equitably.

The Operating Permit fee should be based on a combination of the following principles:

- All water systems pay on an equitable basis to support program capacity (services that benefit all).
- Systems pay based on the services they actually use. Although this will result in a higher per-connection charge for smaller systems, this is consistent with other operating principles and recognizes real demand for services.

- The level of support for both program capacity and program services should be based on an evaluation of the costs of providing those services.

If a responsibility is delegated to either a local government or a third party, funding that the state is spending on providing the service (minus oversight) should also be transferred to the entity providing the service. If the services are beyond those provided by the state, the provider is responsible for securing funding.

Water System Funding

Significant new state resources should be made available to assist water systems in meeting new capital needs. This includes resources to ensure the prompt availability of the state's share of any federal funding that may become available under the State Revolving Fund (SRF) or other programs. If funding through SRF is either inadequate or not available in a timely fashion, a legislative proposal authorizing statewide bonds for identified water system capital needs should be developed and submitted to the people of the state for approval.

State funding programs should provide assistance in a manner consistent with DOH objectives for achieving long-term financially responsible and well-managed systems (viability), preventing the proliferation of new nonviable systems, and financing restructuring activities by satellite managers and others.

The provision of financial assistance should be linked to efforts to have systems operate in compliance with relevant regulatory requirements, recognizing that such financial assistance will focus on public health, but may not be adequate to meet all SDWA requirements.

A state or local mechanism should be developed to provide a source of capital funding for water systems in those counties that have accepted delegation of program functions from DOH, in order to facilitate development of local solutions to water system problems. It should be based on the local jurisdiction's evaluation of system needs.

The state should promote passage of a federally funded program to assist water systems. Development of the financial assistance program for water systems should be shared with Environmental Protection Agency (EPA), and assistance conditioned upon a system's meeting financial viability requirements.

If SRF or statewide bond funds become available, privately-owned water systems should be eligible to receive funding or financial assistance for the benefit of consumers, and means to do this within the state's legal framework should be explored.

Funding priorities should be developed with the assistance of the Water Supply Advisory Committee (WSAC), with emphasis on providing safe and reliable supplies.

All alternative forms of providing financial assistance to water systems should be explored.

The legislature should give special attention to the capital improvement challenges facing small communities, of which drinking water infrastructure is but one.

Data Management/Sharing

Water quality information, including standardized reports of critical indicators, should be accurate, accessible, useful, and easily understandable. The information should be readily

usable by decision-makers at the state and local levels, and by purveyors and consumers, to effectively address public health needs and water resource requirements.

To be effective, all public health jurisdictions must have access to and use an electronic information management system. This system must have the capability for the collection and analysis of administrative, demographic, epidemiologic and service utilization data, as well as other data sets as necessary, to enable planning, administration, evaluation and education for public health protection.

The state must maintain an information management system with up-to-date and accurate information, with adequate retention to provide historical trends on water quality and system performance meeting both state and local needs. The system should be able to link and share water quality data with local and statewide databases in both the public and private sectors.

The state should ensure a high standard of data collection, analysis, dissemination and risk communication, by promoting partnerships and providing leadership, coordination, consultation, and technical assistance.

A basic element of the Water Quality Monitoring Program should be to ensure the validity and quality of the data used to evaluate and assess the degree of public health risk.

The monitoring data collected by the state is a valuable resource that should be actively exploited for its potential to protect public health and provide an economic benefit through easing water systems' monitoring responsibilities.

Cooperation and sharing of information between water systems should be encouraged.

Technical Investigations

Sanitary Surveys should be a fundamental vehicle to evaluate water system performance, assess public health needs, and determine appropriate corrective or compliance measures. Surveys need to be conducted on a routine basis for all systems, and the Sanitary Surveys should incorporate to the degree appropriate an element of operator training and education.

Special Purpose Investigations should be undertaken when there is a recognized potential threat to public health.

The state's program should focus on systems with the largest populations. Smaller systems should be surveyed by LHJs or third parties with DOH's role being to ensure that those performing the surveys are properly trained and that information from such surveys is used to improve system performance. DOH should work with local jurisdictions and third parties to perform Sanitary Surveys when such partnerships are cost-effective and efficient.

Compliance

In carrying out the public drinking water program, it is the role of the responsible authority to develop and implement techniques for bringing all systems into compliance. These techniques must include clear communication of requirements to the public water systems to assist them in fulfilling their responsibility in complying with the regulations.

A compliance program for water systems should include the following components:

- Balance between enforcement activities for violations that are preventive in nature (i.e., system infrastructure) and those that are remedial (i.e., MCL violations);
- Enforcement actions tailored for out-of-compliance water systems based on actions which have proven most effective for similar types of systems/ownership;
- Informal enforcement techniques that penalize non-compliant systems;
- A comprehensive system of financial incentives and penalties/disincentives to compliment informal enforcement techniques;
- Enforcement actions commensurate with the severity of the violation, and increase for subsequent violations;
- In cases where more stringent local regulations exist, compliance activities directed toward meeting local regulations; and
- After a system has been notified of its violation, further compliance efforts focused on using informal tools and educational methods. However, formal compliance tools should be used when it is determined that public health is threatened or in those situations where informal tools have been used without success.

Prevention should be balanced with remediation in assuring drinking water quality:

- When remediation is required, the responsible health authority should coordinate with other agencies to ensure that solutions are sustainable and environmentally compatible.
- When practical, source protection should be supported as a preferred water protection strategy.
- Prevention efforts should be supported at a level which balances reduction in future remediation with current prevention costs.
- Long-term future prevention efforts should be funded at a level to reduce future remediation costs.
- Remediation of significant health and safety problems already identified should take priority over prevention.

Compliance efforts should be prioritized based on population affected and the type of violation.

The responsible authority should use incentives (such as variable fees) to encourage Group A and B systems to achieve and maintain compliance and viability.

Planning

Planning efforts should:

1. Ensure that federal, state and local regulatory mandates are met in a manner that:
    - Protects public health;
    - Assures reliability in the system and source;
    - Utilizes a preventive approach; and,
    - Drives for clarity in state and local regulatory roles and responsibilities.

2. Be designed and integrated to be useful to the operation and management of water systems, with emphasis on public health:

    - Planning decisions should be updated periodically in light of new information;
    - Planning processes, decisions, and data collected should be useful to the water system to which it applies;
    - Greater emphasis should be placed on protecting public health;
    - SDWA implementation should be addressed;
    - Planning requirements should be integrated with state and local land-use planning requirements, so that as water system plans are developed they are consistent with those requirements;
    - There should be certainty for water systems regarding water availability; and
    - There should be recognition that regional planning is necessary to resolve value conflict.

3. Coordinate with other state and local agencies to assure:

    - Consistency in decisions among regulatory agencies on growth management, water resource availability and approval of individual and regional water system plans in the local planning context;
    - Clarity in roles and responsibilities among state and local agencies, with inclusion of tribal and foreign government treaty holders as applicable, so that consistency and clarity in timely decision-making can be achieved; and
    - Coordination focused through a regional planning process.

4. Collect and disseminate information in a format that is easily understandable, to inform and assist decision-makers in a way that:

    - Permits them to assess whether planning is an effective management tool;
    - Continually revises and upgrades information in a timely manner;
    - Compliance with water quality measures can be determined; and
    - Is fed into the decision process and permits decisions to be continually evaluated and revised as necessary.

5. Provide assistance to purveyors and users in a way that takes into account and is sensitive to differences in end-user needs, and is clear, straightforward, practical, and implementable.

6. Focus on the prevention of non-viable systems.

Planning should be encouraged through positive incentives.

Public Education and Training

Many water quality problems can be prevented by educating water purveyors and ensuring that they are properly trained and knowledgeable about the potential for health risks associated with their systems.

All opportunities that arise during routine program implementation (Sanitary Surveys, etc.) should be used to provide technical assistance and training to water system purveyors and operators. This is especially useful for small water systems.

Methods to inform and educate the public about drinking water quality and its implications for public health must be developed. These should include methods for providing education to small communities without organized water system ownership regarding how to organize, secure grants and/or loans, and acquire the system(s).

Training and Smaller Water Systems

Smaller water systems have unique characteristics that require tailored methods of assistance in order to reduce risk to human health from contamination of the drinking water they serve.

Smaller water systems would benefit from training to assist them with:

- Achieving Compliance (Remediation);
- Remaining in Compliance; and
- Restructuring/Consolidation.

The Initiator/Standard Setter for this assistance should be DOH. Providers of training can come from a variety of sources including the private sector.

Major areas of training should include, but not be limited to:

- Education/Awareness
  - Purveyor/Operator Level
  - Consumer Level (*Caveat Emptor)*
- Compliance Assistance
- Financial Assistance
- Alternative Technologies
- Best Available/Affordable Technologies

Appendix B

Key Issues for Emphasis in the Water Supply Advisory Committee Legislative Report

Data Management

Provide new data management development applications for public water system (PWS) compliance, risk assessment, assessing program effectiveness, provide water quality information to local decision-makers, purveyors, etc.

Link and share data with local and statewide databases in the public and private sectors.

Compliance

Address all MCL violations, including monitoring, for all Group A PWS.

Assure water system viability, and develop self assessment tools for utilities to use in the process.

Develop/implement/evaluate passive compliance tools.

Source Water Quality

Assess health risks for specific Group A populations, applying known information regarding health risks, and including emerging contaminants.

Develop and implement a Consolidated Monitoring Program for source water quality, including assuring accuracy of data.

Participate in federal rule development (assessment of impact, coordination of state interests, EPA early involvement process).

Local Government

Clarification of the roles of state and local government with regard to public water systems.

Education and Training

Develop and implement a comprehensive training and education program for local health jurisdictions and small PWSs (technical, monitoring, financial assistance, viability, etc.).

Develop educational materials for consumers.

Washington State Department of Health

Environmental Health Programs

Drinking Water Quality

Background

A wide variety of illnesses, ranging from "acute," such as gastroenteritis, to "chronic," such as cancer, can be spread through contaminated drinking water. Depending upon the contaminant, illness may occur after a single drink of water or only after decades of exposure. Protection of the public's health from waterborne illnesses depends upon the consumer having a safe and reliable drinking water supply. To meet that objective, water systems are required to routinely monitor their water quality and test for contaminants for which the State Board of Health has established public health standards.

1995 Disease Outbreaks

In 1995, there were no waterborne disease outbreaks recorded statewide. Nonetheless, it is likely that some did occur. Illnesses related to drinking water result originally from contamination, but may be simultaneously spread in several ways, such as through food, water, air, or by person to person contact. Few diseases are uniquely spread by drinking water, and the symptoms of waterborne diseases are frequently similar to those of other common illnesses such as the flu or food poisoning. For these and other reasons it is often difficult to attribute an illness to water quality with certainty.

Contamination of Water Supplies in 1995

Naturally occurring chemicals, man-made substances, and microorganisms can all contaminate drinking water. Since this contamination is a health risk to those drinking the water, the best form of health protection is reducing the potential of contamination occurring. However, even public water systems making strong efforts to protect their supplies can sometimes find that contamination has occurred.

Microorganisms. Many microorganisms that can cause illness can exist in water supplies, and there is no feasible method to routinely monitor drinking water for all of them. However, most are introduced into water through animal feces. Because of this, coliform bacteria, which are easily detectable and commonly found in feces, are used as an indicator of potential contamination by disease causing organisms. As long as potential contamination by disease causing organisms persists, the drinking water may cause illness. Rapid resolution of the cause of the contamination is a high public health priority.

Fecal coliform contamination of 228 public water systems occurred during 1995. These systems, which failed to provide adequate protection against potential disease causing organisms, served a total of 600,000 people, or 11.5% of Washington's residents.

Nitrates. Nitrates are organic chemicals that can cause health effects when present in large amounts. High levels of nitrate in drinking water can lead to a blood disorder frequently referred to as "blue baby syndrome," or methemoglobinemia. This disease interferes with the ability of the blood to transport vital oxygen to the organ systems. It principally affects infants. Nitrate enters water systems through contamination of the system's water source by fertilizers, decomposing vegetation, or natural geologic formations. Often other contamination accompanies the nitrates.

A total of 54 public water systems in Washington have been identified with nitrates exceeding the maximum levels allowed by water quality standards. All these water systems are very small, serving a total of about 4,000 people. The emergence of high nitrate levels in these water systems indicates potential contamination problems in an aquifer. The majority are located in eastern Washington. Efforts are underway to reduce the potential sources of nitrate contamination throughout the state. Public education and the provision of temporary water supplies are being used as interim protective measures.

Lead. Lead can adversely affect the mental development of young children. It can enter drinking water supplies from the plumbing in buildings and homes. When lead is present in plumbing fixtures and pipe solder, it can leach into the water under certain water conditions. The amount of lead leached into the water is usually very low and not a critical problem by itself, but it can be a significant contributor when there are also other routes of exposure to lead present.

Eighty-four public water systems, serving 31% of the state's residents, or 1.7 million people, exceeded the health advisory level established by the Environmental Protection Agency (EPA) through 1995. These water systems are in the process of lowering the amount of lead reaching the consumer from home plumbing by controlling the acidity of the water supplied to the homes. Public education is being used as an interim protective measure while the corrections are underway.

Organic Chemicals. About 10% of Washington's drinking water systems have found a variety of industrial and household chemicals, mostly solvents and degreasers, in their sources. Some of these chemicals damage the human liver, nervous system and circulatory system. Most of these chemical contaminants were found in low concentration, and only 2% of the sources had contamination at or near the level for health concern. Analyzing drinking water for volatile organic chemicals is a recent Department of Health (DOH) initiative, and the historical trend is not yet clear. Several periods of sample collection will be necessary to determine if contamination is an ongoing or increasing health problem.

During 1994 and 1995, DOH investigated 1,200 water sources for a variety of synthetic organic chemicals, mostly pesticides. Statewide, contamination was detected in less than 7% of the sites, and no samples analyzed had contaminant levels near the health advisory level. A few areas with an elevated detection rates were identified and are under further investigation.

Ongoing Water System Operation

Each year many new substances that could contaminate drinking water are developed for household and industrial use. While surveillance for contaminants continues among public drinking water supplies, not enough is known to evaluate these new potentially hazardous contaminants. Because of this, the best way to protect health is to resolve the underlying problems that contribute to potential contamination.

Most drinking water contamination in Washington results from faulty operation of the water system, sanitary defects in system facilities, unprotected or vulnerable water sources, and inadequate cross-connection control. These operational issues are routinely evaluated by DOH as part of its annual review of water system operating permits. This allows identification of systems that are "inadequate" under DOH criteria. Of the water systems determined to be inadequate during the 1995 operating permit evaluation, approximately 50% had contamination which was a risk to public health.

Water Resources

An uninterrupted and adequate supply of water is necessary to provide for basic human needs such as drinking, cooking and normal hygiene. If the supply is not dependable, people may turn to other water sources that may be unsafe and threaten their health. In addition, a reliable source is needed to maintain a sufficient flow of water for safe operation.

During 1995, 89 public water systems, serving a total of nearly 30,000 people, were identified as inadequate under the DOH criteria because they had agreed to provide water to more customers than their plans and projected water availability allowed. Proper planning by public water systems is critical if the systems are to meet current and projected water needs. Before an increase in water use is agreed to by a water system, for example, by adding a new subdivision or commercial activity as a customer, a reliable supply of water must be assured. An additional 382 public water systems, serving nearly 35,000 people, did not secure an adequate water supply prior to beginning construction or expansion.

Source Protection

When water sources become contaminated they are very expensive, and sometimes impossible, to treat or replace. Most source contamination is caused by the pollution of groundwaters. This must be prevented in order to preserve the safety of the drinking water supply. Source protection includes identifying potential contaminants for each source of supply, and managing them to minimize future pollution problems.

Approximately 10% of the drinking water sources statewide already have indications of contamination. The potential exists in many others because of inadequate source protection. Of community water systems using only groundwater, 1,952 systems (89%) are actively pursuing wellhead protection. However, most of these systems are in the early stages of developing their protection programs, and source protection alone may not be sufficient.

Surface Water Supply

Most water systems in Washington use groundwater as their source of supply. However, 171 public water systems, serving 2.6 million people, use surface water sources such as rivers, lakes and streams. These sources are above ground, their watersheds exposed and increasingly vulnerable to contamination. Contaminants present in the watersheds, including human and animal wastes, pollution, and storm run-off, can be directly introduced into the surface water. Protecting the watershed can reduce the potential of water contamination. For this reason, all 92 public water systems using surface water sources are currently improving the protection of their watersheds.

Surface Water sources are particularly susceptible to contamination by disease causing organisms. Disinfection with chemicals such as chlorine is effective for most organisms, but a few, such as cryptosporidium and giardia, are resistant to disinfection. Many surface water systems also filter the water to remove these organisms, but filtration is not completely effective. In Washington, six public water systems, which serve a total of 1.6 million people, use unfiltered surface water, under strict DOH and EPA criteria. The use of surface water, with and without filtration, can increase the likelihood of exposing individuals to hazardous contaminants.

Cross-Connection Control

A cross-connection is a link between the distribution lines of a public water system and the house or on-site plumbing. When the normal flow in the water system reverses, as might occur with a break in a distribution line, a cross-connection can allow contaminants to be drawn into the drinking water. As many as half of all reported disease outbreaks associated with drinking water are caused by cross-connections with contaminated or unsafe water.

In 1994, a survey of Washington water systems serving 100 or more connections indicated that 58% did not have an active program to prevent or control cross-connections. DOH estimates that more than 1 million people are served by water systems with inadequate cross-connection control programs. These people are at ongoing risk of illness and disease.

Technical Investigations

Contamination, poor water quality, and unreliable service usually are caused by faulty operational practices and sanitary defects in water system facilities. These conditions, which represent a health risk to those drinking the system's water, can frequently be identified by routine inspection of water system facilities. Well directed technical investigations can help a water system identify and resolve problems before significantly risking the public's health.

During 1995, DOH field investigations resulted in identification of 82 public water systems, serving a total of 17,000 people, with sanitary and operational defects that posed significant risks to the public's health. Identification and correction of these problems not only reduces the current risk, but reduces the potential for future risk.

Fiscal Viability

A public water system must have the financial ability to support continued and long-term operation. Without sufficient capital, a water system may not be able to finance necessary system improvements and repairs or to supply safe and

reliable drinking water.

An assessment of the capital and non-capital needs for public water systems in Washington State was conducted in 1992. The estimated total for repair, replacement and growth was about $2.22 billion for 1993 through 1999. An additional $205 million in operational costs related to federal Safe Drinking Water Act (SDWA) requirements was not included in that estimate. In addition, in order to accommodate growth associated with Growth Management Act plans, local governments estimate that over $1 billion will be needed for water system capital costs by the year 2000.

There is a wide gap between the amount of available funding and the documented need. Of the $2.2 billion needed statewide, $917 million had no identified funding source. In addition, many small water systems that are most in need are not eligible for existing state funding programs. Increased fiscal requirements and restricted capital availability will further reduce the ability of some water systems to protect the public's health.

Viable Water Systems

A public water system must be self-sustaining, have a reliable water supply, and have the managerial, technical, operational and financial capabilities to consistently provide safe drinking water on a long-term basis. The department calls water systems with all these characteristics "viable." Water systems least capable of providing continuous, reliable and appropriate protection of the drinking water pose the greatest potential risk to the public's health. During 1995, DOH began implementation of its financial viability guidelines as part of water system planning.

Small Water Systems

Very small water systems (those with fewer than 100 connections) are least capable of maintaining primary protection for their customers, and represent the most significant system risk group. Such systems serve less than 5% of the state's population, but they constitute 83% of Washington's public water systems. Of the 553 public water systems evaluated as inadequately protecting the public's health, 497 of them were very small.

A small system may not have access to the funds necessary to meet operational and developmental needs due to a variety of financial barriers. Without sufficient capital, a small system may not be able to fund proper public health protection measures. For this reason DOH considers fiscal viability to be the most pressing problem for small water systems. Also, requirements placed upon water systems, particularly those related to the SDWA, are becoming more complex. Small water systems often use volunteer staff with limited experience and insufficient training. As a result, some managerial and operational duties such as planning or ensuring water quality, are performed incorrectly or not at all.

Finally, an increasing number of small systems are growing to the limits of their existing facilities. Under-sized system components result in quantity and pressure problems for system users. Taken together, these issues, independently and collectively, present long-term, and in some cases acute, threats to the health and safety of system users. Small systems experiencing one or more of these issues have difficulty providing safe water, and often lack the resources to resolve problems as they are identified.

Operating Permits

In 1991, the Legislature required all public water systems with 15 or more connections to obtain annual operating permits. The operating permit process involves evaluating the performance of a water system in relation to a variety of areas which impact public health. Essentially, the operating permit is a report card of the water system's ability to provide safe and adequate drinking water to the public. The principal goal is to reduce the number of people at risk of illness due to public water systems with inadequate health protection. As a part of improving the public health protection for the citizens of Washington by the year 2000, DOH has set a goal of 95% compliance with operating permit criteria.

Each water system is evaluated annually and categorized by its compliance with significant public health requirements. In 1993, the first complete year of operating permit evaluation, 22% of the systems were evaluated as incapable of providing adequate protection. By 1995, the percentage of public water systems found to be inadequate had been reduced to 13%, or 553 systems. These systems serve approximately 80,000 people.

Conclusion

The best way to protect Washington's residents from waterborne illness is by preventing contaminants from entering the drinking water supply. Prevention activities, such as resource protection, cross-connection control, small system management planning, and promoting fiscal viability help public water systems ensure the safety of their supply and the health of those drinking their water. However, despite ongoing prevention efforts, contaminants will continue to be found in water supplies. When this happens prompt and appropriate actions, such as source treatment and public education, are necessary to protect the health of those drinking the water.

While each public water system is responsible for preventing health risk, community cooperation is necessary to develop the capacity for identifying and avoiding potential problems when they occur. This includes activities such as community- based education, evaluation of water system facilities and operations, direct technical assistance, and operator education. Providing individuals with information about their water supply, including contaminants and potential health risks, empowers them to make informed decisions to improve their own health protection.

More Information

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Actions Needed in Other Arenas

The Utilities and Transportation Commission: The WSAC identified the following concerns relating to the commission's regulation of rates and customer service:

1. What is the commission's appropriate scope of jurisdiction over water companies? Current statutes limit commission jurisdiction to only investor-owned water companies (no municipals, home owner associations, public utility districts, water districts, or cooperatives) serving 100 or more customers and/or receiving more than $418 average annual revenue per customer ($34.84 per month). Do these jurisdictional thresholds create or exacerbate financial, operation, and health problems.

2. What is the appropriate relationship of economic regulation and the public health principles set forth in this report?

3. What is the appropriate funding level and funding mechanism to support commission regulation? Current funding is set forth in RCW 80 24.010 as one-tenth of one percent of the first $50,000 of gross operating revenues plus two-tenths of one percent of any gross operating revenue in excess of $50,000. Regulatory fees from calendar year 1995 gross operating revenues total $18,278, or just 2.5 percent of the commission's FY 1996 water regulation costs of $720,450.

Comprehensive Land Use and Water Resource Planning: WSAC members developed a principle stating that "Planning requirements should be integrated with state and local land use planning requirements, so that as water system plans are developed, they are consistent with those requirements."

A workgroup identified five major areas of concern relating to comprehensive land use planning and drinking water.

1. How should the state respond if local government approves building permits or subdivisions despite DOH determination of inadequacy of the water supply?

2. What should be done about exempt wells and the proliferation of new small systems needed to support new growth?

3. What restrictions are appropriate for public water systems providing service outside of urban growth areas?

4. What more should the state do to ensure consistency between drinking water planning and land use planning?

5. How should water availability be incorporated into land use plans?

Comprehensive Land Use and Water Resource Planning

Issue	Description of Problem	Impact on* Customers	Impacts* on Utility	Impacts* on Local Govt.**	Impacts* on DOH	Lead in Addressing
Does the state need to be able to respond to a local government**-- failure to respond to an adequacy determination by the state? If yes, how?	Local government may approve building permits or subdivisions despite DOH determination of inadequate water supply.	May be at risk due to water quality or reliability problems. May have to pay for unanticipated costs associated with resolving system problems. May have difficulty obtaining financing.	Liability	Liability Possible receivership action.	Eliminates potential enforcement tool to protect public health. Forces DOH to focus formal enforcement efforts against utility. Strains relationship between state, local governments** and utilities.	DOH and local governments.**
What should be done about exempt wells?	Proliferation of exempt wells in basins where Ecology is severely restricting new or expanded water rights. Proliferation of exempt wells in areas where Ecology is not making water right decisions in a timely manner. Proliferation of exempt wells in areas where larger, more reliable	Lower level of continuous public health protection provided by Group B and individual water systems than by Group A systems. Reduces likelihood of regional solutions to individual system problems.	More difficult to provide cost-effective, reliable services. If systems fail, large utility may be requested to solve problems associated with these very small systems.	Liability Possible receivership action.	Reduces likelihood of regional solutions to individual public health related problems.	Legislature, local governments** and Ecology.

Issue	Description of Problem	Impact on* Customers	Impacts* on Utility	Impacts* on Local Govt.**	Impacts* on DOH	Lead in Addressing
	systems and system operators are available. Increased risk of ground water contamination due to increased number of wells being constructed. Likely to have increased per capita water use					
What restrictions are appropriate for public water systems providing service outside of urban growth areas?	Barriers placed on delivery of safe reliable water in a cost-effective manner. (Barriers may include restrictions on pipe sizing or prohibition of main extensions into certain areas.) Inability to resolve some existing water quality and supply problems. Proliferation of systems using exempt wells.	May increase the cost of resolving an existing water quality or supply problem. In some cases, may be unable to resolve problems.	Increased cost of providing services to rural areas. May discourage utility from becoming a satellite management agency.	Liability for failing systems.	Reduced level of public health protection due to inability to promote regional solutions to identified problems and satellite management program in areas where severe restrictions are placed on rural water systems.	DOH, CTED, local governments**

Issue	Description of Problem	Impact on* Customers	Impacts* on Utility	Impacts* on Local Govt.**	Impacts* on DOH	Lead in Addressing
What more should the state do to ensure consistency between drinking water planning and land use planning?	Inconsistency between land use plans and WSPs. Inconsistency between OFM, county, city, and utility population projections, which provide a basis for determining water demand forecasts. OFM population projections do not include consideration of water resource availability. Many WSPs are not checked to verify consistency with local land use plans and policies. Lack of certainty about relationship of service areas developed as part of regional or local WSPs vs. those developed through local land use planning.	Reduced predictability regarding water availability for development.	Inefficient use of resources. Lack of credibility of WSPs. Inability to implement proposed system improvements. Financial problems may occur if systems are sized based on improper growth projections.	Inefficient use of resources. Inability to implement vision associated with land use plans.	Lack of credibility of coordinated water system plans (CWSPs), abbreviated CWSPs and individual WSPs approved by DOH. Inability to review and comment on most local land use plans.	CTED, Ecology, DOH, local governments**

Issue	Description of Problem	Impact on* Customers	Impacts* on Utility	Impacts* on Local Govt.**	Impacts* on DOH	Lead in Addressing
	Level of service standards developed by utilities may be inconsistent with those developed through local land use planning. Minimal state review of local land use documents to help determine consistency with WSPs. Most local health jurisdictions not actively involved in review of WSPs.					

* "Impacts" refer to probable consequences of failure to take action to change the current situation.

** "Local governments" refer to cities, counties, and local health jurisdictions.

Appendix E

Summary of the 1996 Amendments to the Safe Drinking Water Act

1. **State Revolving Fund (SRF):** Federal grants of low interest loans to federally regulated water systems.
2. **Technical Assistance to Small Systems (education and training):** Up to 2 percent of a state's SRF allocations for assistance to small systems serving less than 10,000 population.
3. **Compliance Reports:** Respond to all water system water quality violations before the violations are repeated. The Environmental Protection Agency (EPA) requires an annual report on significant violators. A portion of the SRF will be used for technical assistance to small systems.
4. **Regulatory Changes:** Changes to EPA requirements relating to arsenic, sulfate, ground water disinfection, disinfection by-products and variances/exemptions from such requirements. (Will require modification of existing state rules.)
5. **System Capacity Development:** Obtain legal authority to prevent formation of systems without adequate capacity to comply with Safe Drinking Water Act requirements, prepare strategies for systems in significant non-compliance with federal requirements, develop strategies for assisting such systems and report to the Governor on progress made under this strategy.
6. **Source Water Assessment:** Conduct source water assessment program.
7. **Operator Certification:** EPA required to develop guidelines specifying minimum standards for certification of operators of the various classes of systems. (Will require regulatory change.)
8. **Monitoring Relief:** Provides interim and permanent monitoring relief to water systems for certain contaminants.
9. **Unregulated Contaminants:** Participate in developing a statewide monitoring plan to develop an occurrence database for unregulated contaminants in small systems.
10. **Source Water Petition Program:** Assistance to develop voluntary incentive-based partnerships to protect source waters.
11. **Water Conservation:** Water conservation plans by categories of system sizes.
12. **Participate in EPA Rulemaking/Development of Guidance Materials:**